

The Influence of Human Resource Planning, Physical Work Environment and Non-Physical Work Environment on Performance Production Employees at PT Perkebunan Nusantara IV Regional I Kebun Bandar Betsy

Dia¹, Yuli Arnida Pohan²

¹ Universitas Potensi Utama; syafitridia64@gmail.com

² Universitas Potensi Utama; kotaksuratuli23@gmail.com

ARTICLE INFO

Keywords:

Employee Performance;
HR Planning;
Physical Work Environment;
Non-Physical Work
Environment.

Article history:

Accepted 2025-09-25

Revised 2025-09-26

Accepted 2025-09-27

ABSTRACT

This study aims to find out and analyze the partial and simultaneous influence of human resource planning, physical work environment and non-physical work environment on employee performance at PT Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. This type of research uses causal associative research and the research method used in this study is the quantitative method. The population in this study is all production employees of PT Perkebunan Nusantara IV Regional I Kebun Bandar Betsy which totals 62 people. The sampling technique in this study is to use a sampling technique with a nonprobability sampling method with a saturated sample technique where the entire population is used as a sample. With the distribution of the questionnaire, the focus is on all employees of PT Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. The results of the study explained that human resource planning partially had a significant effect on employee performance at PT Perkebunan Nusantara IV Region I. The physical work environment partially affects the performance of employees of PT Perkebunan Nusantara IV Regional I. The non-physical work environment partially has a negative and insignificant effect on the performance of employees of PT Perkebunan Nusantara IV Region I. HR planning, physical work environment and non-physical work environment simultaneously have a significant effect on the performance of employees of PT Perkebunan Nusantara IV Region I. adjusted R square value of 0.755 can be called the determination coefficient, this means that 0.755 (75.5%) employee performance can be obtained and explained by HR planning, physical work environment and non-physical work environment while the remaining 24.5% is explained by variables outside the model that were not studied

This is an open access article under the [CC BY license](https://creativecommons.org/licenses/by/4.0/).



Related Authors:

Dia

Universitas Potensi Utama; syafitridia64@gmail.com

1. INTRODUCTION

In an increasingly competitive era of globalization, every company is required to have an effective management system to improve operational efficiency and maintain competitiveness in the marketplace. One key issue that remains a concern in this context is human resource management. Human resources play a key role in the sustainability and success of a company. The importance of human resources lies not only in their quantity but also in the quality of the individuals they possess. These qualities include competence, motivation, integrity, and the ability to adapt to the dynamics of a constantly changing work environment. By Because That, management source Power man become part chair in designing strategy organization, especially in face change global demands for efficiency, innovation and competitiveness sustainable.

PT. Perkebunan Nusantara IV Regional I (Persero) is a state-owned enterprise. Country (State-Owned Enterprises) Which move in the field business plantation, management and marketing of plantation products based in Bandar Betsy, North Sumatra. The company's business activities include the cultivation and processing of oil palm and rubber.

Performance is a benchmark used by companies to assess individuals and groups in effectively completing assigned tasks and responsibilities, resulting in the company's desired results. Employee performance can impact a company's development and progress. Employee performance is considered crucial to achieving goals and success (Wijaya et al., 2021).

One factor influencing performance is human resource planning. Human resource planning, or workforce planning, can be defined as the process of determining workforce needs based on forecasting, development, implementation, and control of those needs, integrated with organizational planning to ensure the right number of employees and their placement, and economically beneficial results (Rahmita, 2019).

Another factor that influences performance is the physical work environment. According to Sedarmayanti (2017), the physical work environment is all the physical conditions surrounding the workplace that directly and indirectly influence how people work. The work environment is everything that exists. around for work And Which can influence himself in carry out assigned tasks.

Apart from human resource planning and the physical work environment, the non-physical work environment is also one of the... factors that can influence Performance. According to Presilawati & Susilo (2022), the non-physical work environment is the social and psychological factors that influence employee behavior and performance, such as work relationships between employees, communication, superior attention, and the work culture that develops within the organization.

2. METHODS

Types and Methods of Research

This research uses a causal associative approach, which aims to identify the causal influence or relationship between independent and dependent variables (Sugiyono, 2022). Through this approach, theories can be developed to explain, predict, and control observed phenomena. Quantitative research aims to develop and apply mathematical models, theories, or hypotheses related to natural phenomena.

Location and Time of Research

This research was conducted at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. The research period was carried out in stages, starting from March 2025 to September 2025.

Population and Sample

A population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by the researcher so that they can be studied and conclusions drawn (Sugiyono, 2022). The population in this study was all production employees of PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy, totaling 62 employees. The sampling technique used in this study was the non-probability sampling method with a saturated sampling technique. Saturated sampling is a sampling technique where all members of the population are sampled. (Sugiyono, 2022)

Data collection technique

- a. Observation is a data collection technique that has specific characteristics compared to other techniques (Sugiyono, 2022). In this study, the observation was conducted by conducting direct observations at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy, the research object.
- b. Interviews, according to Sugiyono (2022), are used as a data collection technique when researchers want to conduct preliminary studies to identify research problems, and also when researchers want to learn more in-depth things from respondents and the number of respondents is small. This interview was conducted directly with production employees at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy.
- c. documents are records of past events. Documentation can take the form of written material, images, or a person's own work. This documentation, like previous research on employee performance, can be helpful in supporting this research.
- d. A questionnaire is a data collection technique that uses a set of written statements given to respondents to answer. In this study, a questionnaire was used as a data collection technique. This questionnaire was a necessary method and was used in this study for data collection.

3. FINDINGS AND DISCUSSION

Data Analysis Techniques

Validity and Reliability Test

Table 1. Validity Test Results

Item Statement	Person Correlation	Information
X1.1	0.591	Valid
X1.2	0.665	Valid
X1.3	0.476	Valid
X1.4	0.571	Valid
X1.5	0.559	Valid
X1.6	0.586	Valid
X1.7	0.633	Valid
X1.8	0.498	Valid
X1.9	0.625	Valid

Item Statement	Person Correlation	Information
X1.10	0.547	Valid
X2.1	0.443	Valid
X2.2	0.445	Valid
X2.3	0.414	Valid
X2.4	0.370	Valid
X2.5	0.562	Valid
X2.6	0.670	Valid
X2.7	0.452	Valid
X2.8	0.443	Valid
X2.9	0.470	Valid
X2.10	0.615	Valid
X2.11	0.574	Valid
X2.12	0.508	Valid
X3.1	0.596	Valid
X3.2	0.581	Valid
X3.3	0.542	Valid
X3.4	0.618	Valid
X3.5	0.561	Valid
X3.6	0.709	Valid
Y.1	0.745	Valid
Y.2	0.610	Valid
Y.3	0.656	Valid
Y.4	0.677	Valid
Y.5	0.610	Valid
Y.6	0.672	Valid

Based on Table 1 above, it is known that the results of the *statistical* validity test on the variables of Human Resource Planning, Physical Work Environment and Non-Physical Work Environment, the person *correlation* value for all statement items has a value of > 0.361 , so it is concluded that the results of the research data on each available statement item are valid/legitimate.

Table 2. Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
.774	7

Reliability Statistics	
Cronbach's Alpha	N of Items
.722	7

Reliability Statistics	
Cronbach's Alpha	N of Items
.700	7

Reliability Statistics	
Cronbach's Alpha	N of Items
.785	7

Based on Table 2. above, it is known that *the Cronbach's alpha value* for all research variables is > 0.60 , so it can be said that the results of the reliability test for all variables are reliable.

Normality Test

Table 3. Results of the Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		62
Normal Parameters ^{a,b}	Mean	.0000000
	Standard Deviation	1.58286759
Most Extreme Differences	Absolute	.083
	Positive	.083
	Negative	-.048
Test Statistics		.083
Asymp. Sig. (2-tailed)		.200 ^{c,d}
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Based on Table 3. above, it is known that the results of the Kolmogorov-Smirnov test have a significance value of $0.200 > 0.05$ so it can be concluded that the data tested is normally distributed.

Heteroscedasticity Test Results

Table 4. Results of the Heteroscedasticity Glacier Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.960	3.070		-.638	.526
Human Resource Planning	-.033	.091	-.061	-.364	.717
Physical Work Environment	.085	.088	.175	.971	.336
Physical Work Environment	.039	.068	.102	.580	.564
a. Dependent Variable: Abs_RES					

Based on Table 4. above, the results of the Glejser test above, the significance value of the three independent variables is > 0.05 , so it can be concluded that heteroscedasticity does not occur.

Multicollinearity Test Results

Table 5. Multicollinearity Test Results

Coefficients ^a		
Model	Collinearity Statistics	
	Tolerance	VIF
Human Resource Planning	.585	1.710
Physical Work Environment	.505	1.982
Physical Work Environment	.534	1.874
a. Dependent Variable: Employee Performance		

Based on Table 5, it is known that the results of the multicollinearity test for the HR planning variable (X1), physical work environment (X2) and non-physical work environment (X3) has a *tolerance value* > 0.10 and VIF < 10, so this research is declared free from multicollinearity problems.

Multiple Linear Regression Test Results

Table 6. Multiple Linear Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-33,876	5,177		-6,544	.000
Human Resource Planning	.641	.154	.346	4,173	.000
Physical Work Environment	.842	.148	.508	5,687	.000
Physical Work Environment	-.197	.115	-.149	-1,720	.091
a. Dependent Variable: Employee Performance					

- a. Constant $\alpha = -33.876$

It can be seen from the regression equation that the constant value of α is 1.552, which means that HR Planning, Physical Work Environment and Non-Physical Work Environment in constant state -33,876.

- b. $\beta_1 = 0.641$

It can be seen from the regression equation that the regression coefficient value β_1 of 0.641 and has a value of positive. This means if variables planning tbps increases by one unit then the decision variable purchase will also increase by 0.641 units.

- c. $\beta_2 = 0.842$

It can be seen from the regression equation that the regression coefficient value β_2 is 0.842 and has a value of positive. This means if variables environment Work physique increases by one unit then the decision variable purchase will also increase by 0.842 units.

d. $\beta_3 = 0.189$

It can be seen from the regression equation that the regression coefficient value β_3 is 0.197 and has a positive value. This means that if the environmental variable... non- physical work increases by one unit then the decision variable purchase will also increase by 0.197 units.

Partial Test Results (t-Test)

Table 7. Partial Test Results (t-Test)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-33,876	5,177		-6,544	.000
Human Resource Planning	.641	.154	.346	4,173	.000
Physical Work Environment	.842	.148	.508	5,687	.000
Non-Physical Work Environment	-.197	.115	-.149	-1,720	.091
a. Dependent Variable: Employee Performance					

- The influence of HR planning on employee performance, with a calculated t value of 4.173 > t table 1.67 (nk = 62-4 = 58 at 0.05/5%) and a significance value of 0.000 < 0.05, so that Ha is accepted and H0 is rejected, it can be concluded that employee planning Human resources partially have a positive and significant effect on employee performance. (Hypothesis 1 is accepted).
- The influence of product design on employee performance, with a calculated t value 5.687 > t table 1.67 (nk = 62-4 = 58 at 0.05/5%) and significance value 0.000 < 0.05, so Ha is accepted and H0 is rejected, it can be concluded that the environment Work physique in a way partial positive and significant influence on employee performance. (Hypothesis 2 is accepted).
- The influence of product quality on employee performance, with a calculated t value of -1.720 > t table 1.67 (nk = 62-4 = 58 at 0.05/5%) and a significance value of 0.091 < 0.05, so that Ha is rejected and H0 is accepted, it can be concluded that the work environment non- physical work in a way partial has a negative and insignificant effect on employee performance. (Hypothesis 3 is rejected).

Simultaneous Test Results (F-Test)

Table 8. Simultaneous Test Results (F-Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	502 . 263	3	167 . 421	63,536	.000 ^b
	Residual	152 . 834	58	26 . 35		
	Total	6 55.09 7	61			
a. Dependent Variable: Employee Performance						
b. Predictors: (Constant), Human Resource Planning , Physical Work Environment , Non-Physical Work Environment						

Based on Table 8. above, it is known that the F test value produces an F-count of $63,536 > F_{\text{table } 2.67} (nk-1 \text{ at } k = 62-3-1 = 58 \text{ at } 3)$ and a significance of $0.000 < 0.05$ so that H_a is accepted and H_o is rejected, meaning that human resource planning, physical work environment and the non-physical work environment simultaneously influence employee performance. Thus, the previous hypothesis (H_3) is accepted.

Determination Test Results

Table 9. Determination Test Results

Model Summary				
Model	R	R Square	Adjust R Square	Standard Error of the Estimate
1	.876 ^a	.767	.755	1,623
a. Predictors: (Constant), Human Resource Planning , Physical Work Environment , Non-Physical Work Environment				

Based on Table 9. above, it is known that the *adjusted R square value* of 0.755 can be called the coefficient of determination, this means that 0.755 (75.5%) of employee performance can be obtained and explained by HR planning, physical work environment. and non-physical work environment , while the remaining 24.5% is explained by variables outside the model that were not studied.

The Influence of Human Resource Planning on Employee Performance

Planning t-count value SDM of $4.173 > t_{\text{table } 1.67} (nk = 62-4 = 58 \text{ at } 0.05/ 5\%)$ and significance $0.01 < 0.05$, so that H_a is accepted and H_o is rejected, then the planning HR has a positive and significant influence on performance employee .

The Influence of the Physical Work Environment on Employee Performance

Environmental t-value Work physique of $5.637 > t_{\text{table } 1.67} (nk= 62-4= 58 \text{ at } 0.05/5\%)$ and significance $0.000 < 0.05$, so H_a is accepted and H_o is rejected, then environment Work physique has a positive and significant impact on performance employee .

The Influence of Non-Physical Work Environment on Employee Performance

Environmental t-value non- physical work of $-1.720 > t_{\text{table } 1.67} (nk= 62-4= 58 \text{ at } 0.05/5\%)$ and significance $0.091 < 0.05$, so H_a is rejected and H_o is accepted, then environment non- physical work No has a positive and insignificant effect on performance employee .

The Influence of Human Resource Planning, Physical Work Environment and Non-Physical Work Environment on Employee Performance

The results of the study indicate that human resource planning, physical work environment, and non-physical work environment have a positive and significant effect on employee performance at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy . This can be seen from the F test which produces a calculated F. $63,536 > F_{\text{table } 2.67} (nk = 62-4 = 58)$ so that H_a is accepted and H_o is rejected, human resource planning, physical work environment and non-physical work environment have an effect on employee performance .

4. CONCLUSION

Based on the results of the research that has been conducted, the author can draw several conclusions as follows , Based on the results of the t-test, the HR Planning variable (X_1) has a positive

and significant partial effect on the dependent variable (Y), namely Employee Performance at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. With a t-count value of $4.173 > t\text{-table } 1.67$ obtained with a significance value of $0.000 < 0.05$. Based on the results of the t-test, the Physical Work Environment variable (X2) has a positive and significant partial effect on the dependent variable (Y), namely Employee Performance at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. The t-count value is $5.637 > t\text{ table } 1.67$ with a significance value of $0.000 < 0.05$. Based on the results of the t-test, the Non-Physical Work Environment variable (X3) has a negative and partially insignificant effect on the dependent variable (Y), namely Employee Performance at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. The calculated t-value is $-1.720 > t\text{-table } -1.67$ with a significance value of $0.000 < 0.091$. Based on the results of the f test, the independent variables consisting of HR Planning (X1), Physical Work Environment (X2), and Non-Physical Work Environment (X3) have a positive and significant effect simultaneously on the dependent variable (Y), namely Employee Performance at PT. Perkebunan Nusantara IV Regional I Kebun Bandar Betsy. The F count value is $63.536 > F\text{ table } 2.67$ with a significance value of $0.000 < 0.05$.

REFERENCE

- Adithya, WR, Sari, TN, Pohan, YA, Risal, T., Prabowo, A., Dewi, AF, & Simatupang, J. (2023). Program Implementation and Introduction to the Work Environment at Pertamina Mor 1 Medan to Students of the University of Potensi Utama Medan. *Joong-Ki: Journal of Community Service*, 2(3), 682-686.
- Ali Khasbi Akbar, & Jaenab Jaenab. (2023). The Influence of Discipline and Physical Work Environment on Employee Productivity at the Cooperatives, Industry, and Trade Service of Bima City. *Journal of Management Research*, 1 (3). <https://doi.org/10.54066/jurma.v1i3.626>
- Aliyuddin, A. (2022). Human Resource Planning in Increasing the Work Motivation of Zakat Collectors at BAZNAS Depok City in 2021.
- Andrean, L., & Pohan, YA (2024). The Effect Of Compensation, Non-Physical Work Environment And Work Stress On Employee Turnoverintention At Pt. Mitra Tsunami Marine. *Widya Journal*, 5(2), 2051-2065.
- Fauziyyah, K., & Rohyani, I. (2022). The influence of self-efficacy, non-physical work environment, and work discipline on employee performance at PT Semestanustra Distrindo Depo Kebumen. *Scientific Journal of Management, Business and Accounting Students (JIMMBA)*, 4 (3), 330-343.
- Mustaqim, I., & Fauzi, A. (2022). The Influence of Human Resource Planning, Education, and Training on Employee Performance. Literature Review of Human Resource Management. *Journal of Accounting and Business Management*, 2 (3), 100-105.
- Nitisemito, R. (2019). *The Influence of Physical Work Environment on the Performance of Government Employees at the Regional Revenue Agency of Tabalong Regency*.
- Purwanti, Y., Hargyatni, DT, & Kusumajaya, RA (2022). The influence of work motivation and non-physical work environment on employee performance at PT FIF GROUP, Kedaton branch. *Journal of Management and Business*, Vol. 2, No. 1, May, pp. 83-92. P-Issn: 2808-8786
- Putri, C. (2022). The influence of workload, transformational leadership, and non-physical work environment on employee job satisfaction at PT Raja Grafindo. *Procuratio: Scientific Journal of Management*. 4(1).
- Presilawati, A., & Susilo, A. (2022). The influence of physical and non-physical work environments on satisfaction at PT Telkom Indonesia Witel Jatim Selatan Malang.

- Rahmita, R. (2019). The Influence of Career Development and Human Resource Planning on Employee Work Productivity at PT. Ciomas Adisatwa Medan (*Doctoral dissertation, Medan Area University*).
- Sedarmayanti. (2017). Human Resource Planning and Development to Improve Competence, Performance, and Work Productivity.
- Silaen, NR, Syamsuriansyah, Chairunnisah, R., Sari, MR, Mahriani, E., & Tanjung, R. (2021). *Employee Performance (Employee Performance Assessment)* . Widina Bhakti Persada Bandung.
- Sugiyono. (2022). *Quantitative, qualitative, and R&D research methods* . Alfabeta, cv.
- Wijaya, IA, Shahirah, RA, & Yuliana, (2021). Analysis Of The Effect Of Communication And Teamwork On Improving Employee Performance. *Indonesian Multidisciplinary Scientific Journal Vol , 2 (3)*, \. <https://doi.org/10.53866/jimi.v2i1.109>